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A new species of *Iolaus* Hübner subgenus *Epamera* Druce (Lepidoptera: Lycaenidae) from the Nyika Plateau, Zambia

by

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Iolaus (Epamera) helenae sp. nov. is described from the Nyika Plateau, Zambia, with notes on its early stages, habits and habitat.

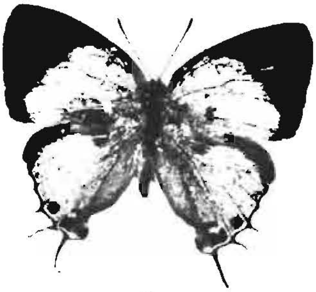
INTRODUCTION

Recent increased interest in the breeding of *Iolaus* Hübner has led to the discovery of several new species and subspecies (Dickson 1976; Vári 1976; Henning and Henning 1984; Heath 1983, 1985). The larvae of an unknown *Iolaus* were discovered by Mr I. Bampton on the Nyika Plateau a few years ago but he was unable to rear them. Subsequent to this two worn females of a new *Iolaus* species were caught in the same area. In 1985 Mr I. Bampton reared more larvae and found that the adults corresponded to the two worn females. With this new material this distinct new species can now be described. It appears to belong to the *Iolaus (Epamera) pollux* subgroup of species. Members of the *pollux* subgroup are characterized by having the males and females similarly coloured and marked. The under side of both fore and hind wings have fairly straight discal and postdiscal lines which converge posteriorly. The male is distinguished by the sex brand on the hind wing upper side. There are four species in this subgroup:

Iolaus (Epamera) pollux Aurivillius 1895
Iolaus (Epamera) pseudopollux Stempffer 1962
Iolaus (Epamera) flavilinea Stempffer 1962
Iolaus (Epamera) helenae sp. nov.

Key to the *Iolaus (Epamera) pollux* subgroup

1 Hind wing under side with medial black line running from veins 3A to CuA2 sharply angled in area CuA2 .... *pollux*
– Hind wing under side with medial black line running from veins 3A to CuA2 not sharply angled in area CuA2 2
2 Fore wing upper side with apical half of wing black, inner margin relatively straight; hind wing under side with distal stripes yellow .... *flavilinea*
– Fore wing upper side with black apical area restricted and inner margin rounded; hind wing under side with distal stripes brown to reddish-brown 3
3 Hind wing upper side with broad costal border extending to vein M1; under side bands broad reddish-brown, hind wing under side with a spot subbasally in Sc + R1 .... *helenae*



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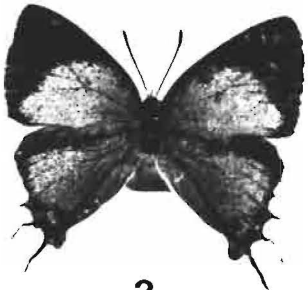

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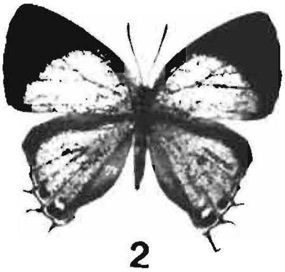

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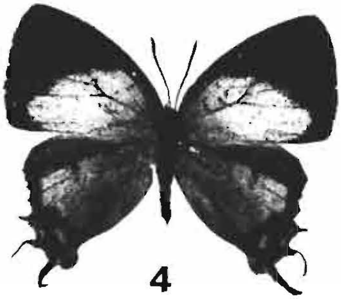

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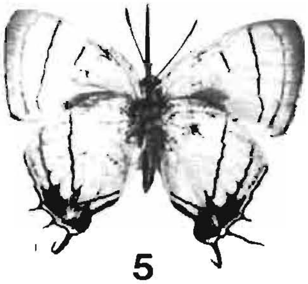

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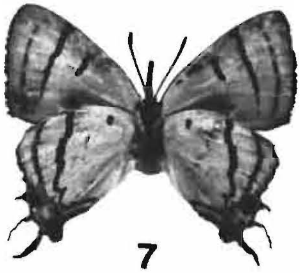

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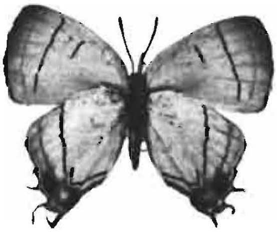

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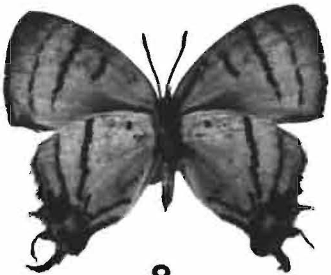

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– Hind wing upper side with narrow costal border; under side bands narrow brown, hind wing under side spot in Sc + R1 absent . . . . *pseudopollux*

Iolaus (Epamera) helenae sp. nov., Figs 3–4, 7–8, 9–11.

MALE. Upper side. Most similar to *I. (E.) pseudopollux* but blue areas darker in colour; hind wing with costal border broader, extending down to vein M1; black marginal border broader and with an additional black spot submarginally in CuA2. Under side. Similar to *I. (E.) pseudopollux* but with fore wing medial and discal markings reddish-brown and broad, postdiscal line black. Hind wing with a reddish-brown spot subbasally in cell Sc + R1; transverse disco-postdiscal band reddish-brown and broad; submarginal band black; submarginal ochre-yellow markings less extensive than in *I. (E.) pseudopollux*. Female. Most similar to *I. (E.) pseudopollux* but differs from it in the same manner as the male: the upper side black markings being more extensive and the under side markings being broader and reddish-brown with an extra spot subbasally in cell Sc + R1 of hind wing.

MALE HOLOTYPE. Fore wing length 14 mm; antenna-wing ratio 0,44. *Wings, upper side.* Fore wing: metallic pure blue, forming a large semicircle, with a moderately wide black border on costa becoming very broad at apex extending down outer margin to tornus; inner marginal tuft of hairs black; cilia dark grey. Hind wing: metallic pure blue with a greyish-black costal border extending down to vein M1; black outer marginal border very narrow from anal angle to cell M3, then much broader to apex; small grey sex brand at base of vein Rs; two black sub-marginal spots in cells CuA1 and CuA2 and an additional spot postdiscally in CuA2; on anal-angular lobe is an orange and black spot dusted with blue scales; 3 small tails, the one on vein CuA1 short; tails black margined and tipped with white; cilia white. *Under side.* Fore wing: ground colour white; medial area with a disco-cellular red line from vein M1 to CuA1; discal area with reddish-orange line tapering from costa to cell CuA2; postdiscal area with a series of dark grey lines from costa to cell CuA2; wing margined with a narrow black line; cilia dark grey. Hind wing: ground colour white, crossed by a broad reddish-orange transverse disco-postdical line from costa to vein CuA2; a thin black line extends from inner margin to vein CuA2 where it meets the reddish-orange line; postdiscal area with a dark grey line extending from costa to vein CuA1 where it becomes broader and ochre-yellow in colour to inner margin; submarginal area with a black, blue-dusted spot in cell CuA1 and a similar spot on the anal lobe; subbasally in cell Sc + R1 is a reddish-orange spot; outer margin with a thin black line; cilia white. *Genitalia* (Figs 9–11). Aedeagus (Fig. 9) very large compared to *I. (E.) pollux* (Fig. 12) and *I. (E.) pseudopollux* (Fig. 16), with large conspicuous distal hook and cornuti; the aedeagus of *I. (E.) flavilinea* is short and much smaller than all the others with no apparent hooks or cornuti. Valves very short and broad, sharply angled distally (Fig. 11).

FEMALE PARATYPES. Fore wing lengths 15–16 mm; mean 15,5 mm; antenna-wing ratios 0,44–0,45, mean 0,45. *Wings, upper side.* Fore wing: virtually

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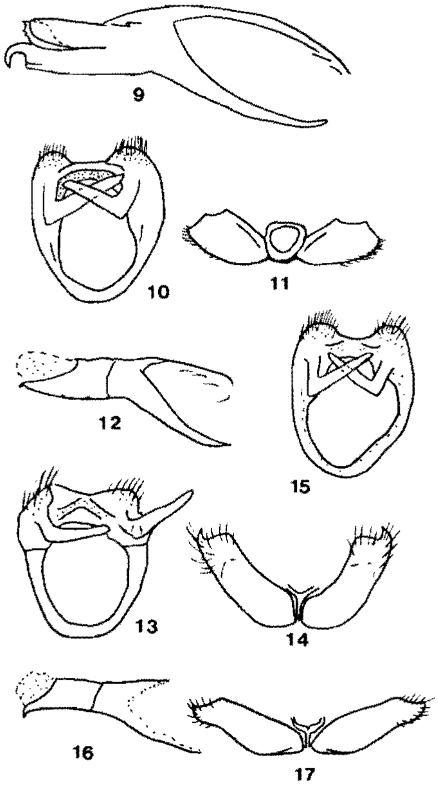
Figs 1–8. *Iolaus (Epamera)* species. 1–4. Upper side. 1. *I. (E.) pollux* ♂. 2. *I. (E.) pseudopollux* ♀. 3. *I. (E.) helenae* ♂ holotype. 4. *I. (E.) helenae* ♀ paratype. 5–8. Under side. 5. *I. (E.) pollux* ♂. 6. *I. (E.) pseudopollux* ♀. 7. *I. (E.) helenae* ♂ holotype. 8. *I. (E.) helenae* ♀ paratype. (Photographs by W. J. Morrison).



Figs 9–17. ♂ Genitalia. 9–11. *I. (E.) helenae* holotype. 12–14. *I. (E.) pollux.* 15–17. *I. (E.) pseudopollux.*

identical to that of the holotype, the black outer marginal border may be slightly broader. Hind wing: similar to holotype but black costal border may extend down to vein M2, the outer marginal border is slightly broader and the black submarginal spots in cells CuA1 and CuA2, and the postdiscal spot in CuA2 are larger; in addition there may be a black discal spot in cell M2. *Under side.* As in holotype but the reddish-orange lines are greyer and duller in one specimen.

Material examined. ♂ Holotype: ZAMBIA, Chowo Forest, bred, emerged 1.ix.1985, I. Bampton. Paratypes: 1 ♀ same data but emerged 7.iv.1985; 1 ♀ same data but 17.iii.1985, 1 ♀ same data but 9.i.1982, R. Dowsett.

The holotype is in the British Museum (Natural History), London; 2 paratypes are in the Henning collection and one paratype is in the British Museum (Natural History).

The species is named after Ms Helen Jackson of Harare, Zimbabwe.

LIFE HISTORY. *Egg.* Laid singly on the leaves of the foodplant *Tapinanthus vittatus* Danser (Loranthaceae). In general appearance the egg is similar to that of *Stugeta* *bowkeri* (Trimen). It is white with large indentations and hatches after about 10 days. *Larva.* The honey-gland and tubercles are present in the 2nd to 4th instars. The larvae in the 3rd and 4th instars resemble bird droppings. In general appearance the 4th (final) instar comes closest to that of *I. (E.) alienus* Trimen. It differs in having a large spine protruding outwards and backwards on either side of the posterior segments. The colour of the final instar larva is green with brown markings or pinkish-red with darker maroon-red markings. *Pupa.* Length 10 mm, attached by the cremastral hooks only. It is reddish-brown in colour and is similar to *S. bowkeri* but smaller and more slender with a longer abdomen and a single dorsal protuberance.

HABITS AND HABITAT. *I. (E.) helenae* is only known from the Chowo Forest in Zambia, on the western side of the Nyika Plateau. It and the Manyenjere forest are the two largest of the western sub-montane evergreen forests on the Nyika. Chowo Forest is 2 300 m above sea level. Both forests are situated in the Zambia Nyika National Park. Although he visited the area many times over a period of 10 years Mr I. Bampton has only ever observed one specimen, a female, on the wing. She was observed flying around a rock near a clump of *T. vittatus* where six larvae were found. She settled on leaves at the forest edge at a height of about 2 m above the ground where she was captured. Mr R. Dowsett who lived in the area for many years also captured a female on the forest edge. The species appears to be on the wing in March/April and again in September. From the scarcity of records it would appear that the species is an inhabitant of the forest canopy. The other species in the *I. (E.) pollux* subgroup are also canopy dwellers and are seldom recorded.

DISTRIBUTION. Zambia, in the Chowo Forest on the Nyika Plateau. 10°40′ S 33°40′ E.

ACKNOWLEDGEMENTS

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